

Summary of Proposed Nonresidential Measures

**2005 Energy Efficiency Standards
November 5, 2002**

Time Dependent Valuation

- Proponent: PG&E
- Workshop: April 2
- Standard: Both
- TDV energy replaces source energy throughout the standard and the ACM manuals.

Gas Cooling

- Proponent: SoCalGas
- Workshop: August 27
- Standard: Both Modeling
- New mandatory requirements for gas-engine heat pumps and AC units (§112).
- New modeling rules for gas-engine heat pumps and AC units are added to the ACM.

Photovoltaics

- Proponent: None
- Workshop: Not scheduled
- Standard: Both
- Nothing is implemented in the November 5, 2002 draft.
- The CEC has determined that no credits will be offered for PVs.
- A pre-wiring requirement is being considered as a mandatory measure.

Demand Responsive Controls

- Proponent: None
- Workshop: Not scheduled
- Standard: Both
- Still being considered.

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Nonresidential Schedules

- Proponent: PG&E
- Workshop: April 2
- Standard: NR Modeling
- Schedules were developed from the NRNC database for offices, assembly, schools and retail. These are still being considered.

Lighting Controls Under Skylights

- Proponent: PG&E
- Workshop: May 30
- Standard: NR Lgt
- To be addressed on November 18, 2002.

Cool Roofs Prescriptive Requirement

- Proponent: PG&E
- Workshop: May 30
- Standard: NR Env
- §143 is modified to make cool roofs a prescriptive requirement for low-slope applications.
- Trade-off procedures have been modified to treat reflectance as a continuous variable in the compliance process.
- Reflectance and emittance used for compliance must be provided by the CRRC through its standard rating procedure (CRRC-1-2002)
- Durability standards are being researched for liquid applied coatings.

High Performance Relocatable Classrooms

- Proponent: PG&E
 - Workshop: July 18
 - Standard: NR Env
- Criteria has been added to § 143 for relocatable classrooms. The criteria is used across the state with no variation for climate zone, because of the portable nature of relocatable classrooms.
 - Portables constructed for a particular climate zone can use the nonresidential criteria for that climate zone, but the building must be labeled as being appropriate for just that climates.

Lay-in Ceiling Insulation

- Proponent: PG&E
- Workshop: August 8
- Standard: NR Env
- Installing insulation over lay-in ceiling tiles is prohibited unless the plenum height above the ceiling is greater than 12 ft and the conditioned space is less than 2,000 ft².
- Language is clarified so that plenums are not considered attics and not required to be ventilated.

Group 4 Measures from November workshops

- Proponent: Variety
 - Workshop: Group 4
 - Standard: NR Env
- Prescriptive limit of 40% added for west facing glass. This limit is the basis of trade-offs with both the whole building and envelope trade-off method.
 - A requirement is added to §118 requiring that roof insulation be placed below the water proof membrane.
 - Insulation requirements are added for heated slabs. This is in §118 and applies to both residential and nonresidential buildings.
 - U-factor calculations may be modified for the nonresidential conservation manual to be consistent with ASHRAE/IESNA Standard 90.1 Appendix A.

Acceptance Requirements

- Proponent: NBI
- Workshop: April 22
- Standard: NR HVAC
- ACM NJ-2005 is added to the nonresidential ACM.
- References to the acceptance requirements are sprinkled throughout the standard where they apply.

Equipment Modeling

- Proponent: PG&E
- Workshop: April 2
- Standard: NR Modeling
- Procedures have been developed to more accurately model nonresidential HVAC equipment.
- These will be included in the next draft of the nonresidential ACM manual.

Demand Control Ventilation

- Proponent: CEC
- Workshop: April 23
- Standard: NR HVAC
- New mandatory requirement for DCV apply for single zone units with economizers (§121(c)3 & 4.
- The requirement applies to spaces with an occupant density greater than 25 persons per 1,000 ft².

Cooling Towers

- Proponent: PG&E
- Workshop: April 23
- Standard: NR HVAC
- Requirement added for flow turndown (§144(h)3)
- Limitation added on the application centrifugal fan towers (§144(h)4)
- Air cooled chillers prohibited for sizes less than 300 tons (§144(i)), with appropriate exceptions.

Hydronic System Measures

- Proponent: CEC
- Workshop: May 30
- Standard: NR HVAC
- Variable flow required chilled and hot water systems (§144(j)1)
- Chiller and boiler isolation (§144(j)2 & 3)
- Temperature reset controls chilled and hot water systems (§144(j)4)
- Variable flow required for water-loop heat pump loops (§144(j)5)
- VSDs for variable flow condenser and chilled water systems >5hp (§144(j)1)

Nonresidential Duct Sealing and Insulation

- Proponent: PG&E
- Workshop: July 18
- Standard: NR HVAC
- R-8 min insulation (mandatory, §124(a)) and duct sealing to 6% leakage (prescriptive §144(k)) for small single zone systems with >25% duct area in unconditioned spaces or out of doors.
- Leakage must be certified through field tests

Improvements for Existing Light Commercial Buildings

- Proponent: PG&E
- Workshop: July 18
- Standard: NR HVAC
- No changes have been made for the November 2005 draft. This measure is still under consideration.

ECM Motors

- Proponent: CEC
 - Workshop: August 8
 - Standard: NR HVAC
- New prescriptive requirement for ECM motors on series style boxes (§144(c)4)

VAV Size Thresholds

- Proponent: CEC
- Workshop: August 8
- Standard: NR HVAC
- Dropped VSD threshold to 10 hp (§144(c)2)

Variable Speed Fans

- Proponent: CEC
 - Workshop: Not applicable
 - Standard: NR HVAC
- This is not implemented in the November 5, 2002 version. May be considered in a later draft.

Group 4 from November workshops

- Proponent: Variety
- Workshop: Group 4
- Standard: NR HVAC
- Chiller tables modified
- VAV Pressure sensor
- References updated